THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

WATER RESOURCES COMMISSION FINDINGS

Interbasin Transfer Application
From the City of Brockton
To Purchase Water From the Aquaria Regional Desalinization Project

March 11, 2004

DECISION

On March 11, 2004, the Water Resources Commission, by a unanimous vote of those present, approved the City of Brockton's request to purchase water from the proposed Aquaria Regional Desalinization Project. This vote was taken after a review of the facts provided by the applicant, analysis of the associated data, and consideration of public and agency comments concerning this proposal.

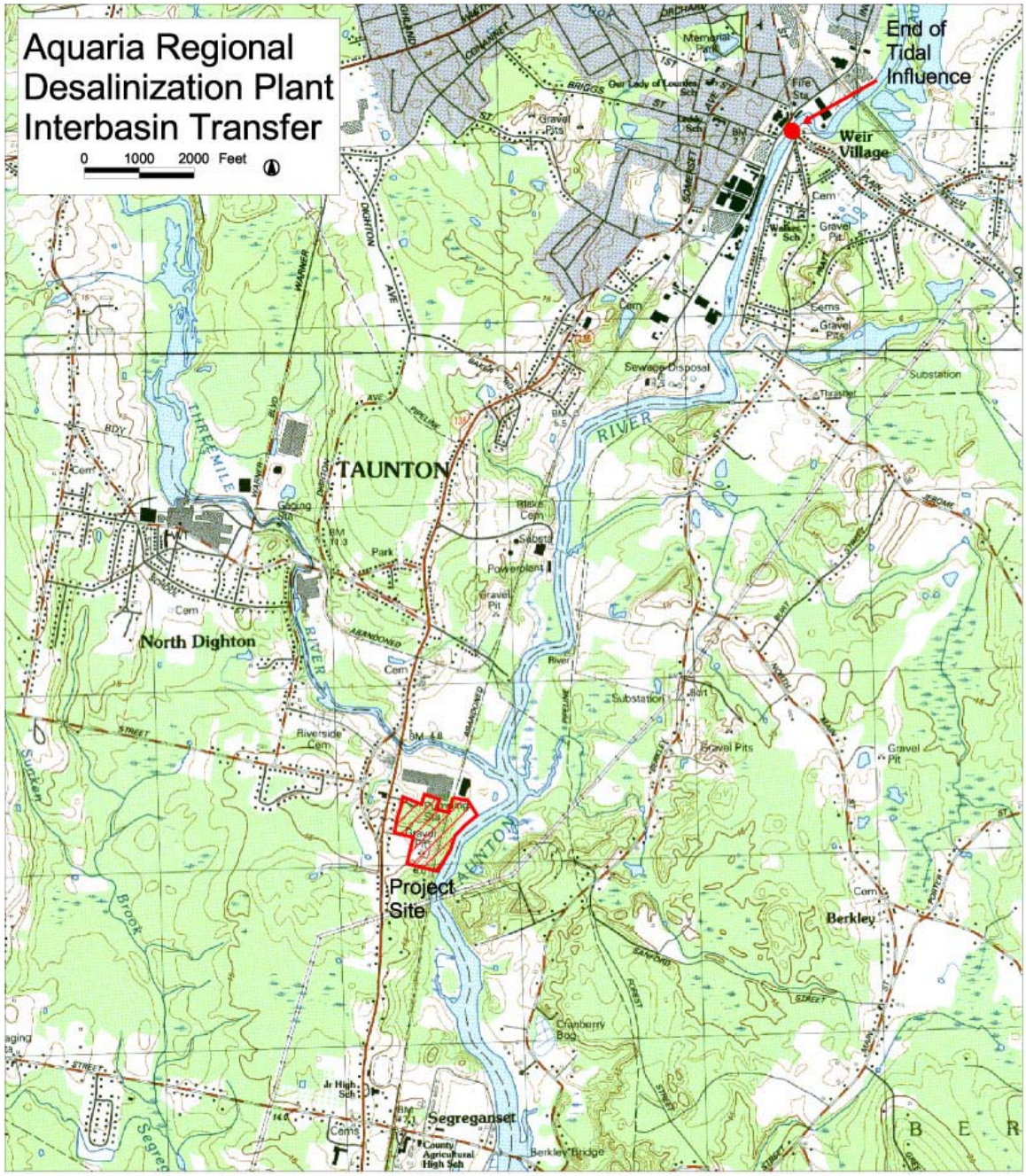
BACKGROUND

On August 14, 2003, the Massachusetts Water Resources Commission (WRC) found that the environmental criteria of the Interbasin Transfer Act (ITA) had been met for the proposed Aquaria Regional Desalinization Plant. Aquaria applied under the ITA for approval to develop a regional water supply facility in Dighton (Figure 1). Water will be withdrawn from the Massachusetts Coastal Basin and then sold to communities primarily in the Taunton River Basin. In its decision, the WRC stated that individual customers would be evaluated against the water supply management criteria of the ITA as they filed the Notice of Project Change (NPC) required by the Secretary's Certificate on the Final EIR for the Aquaria project.

On October 31, 2003, the City of Brockton filed an NPC for this project (EOEA #10185) with MEPA. The NPC contained the information needed to evaluate compliance by Brockton with the water supply management criteria of the ITA. The WRC considers the NPC to be Brockton's portion of the Aquaria ITA application.

On December 11, 2003, after review of the information contained in the NPC, the WRC accepted Brockton's portion of the ITA application as complete. The fourth public hearing connected with the Aquaria project, to take comments on Brockton's portion of the ITA application, was held on January 22, 2004 in Brockton, the receiving basin. Responses to comments received through the public hearing process are available in a separate report.

Figure 1


Aquaria Regional
Desalinization Plant
Interbasin Transfer
0 1000 2000 Feet
End of
Tidal
Influence
Weir
Village
TAUNTON
RIVER
North Dighton
Project
Site
Berkley
Segreganset
Substation
Sewage Disposal
Gravel Pits
Cranberry
Bog
Powerplant
Riverside
Cem
Berkley Bridge

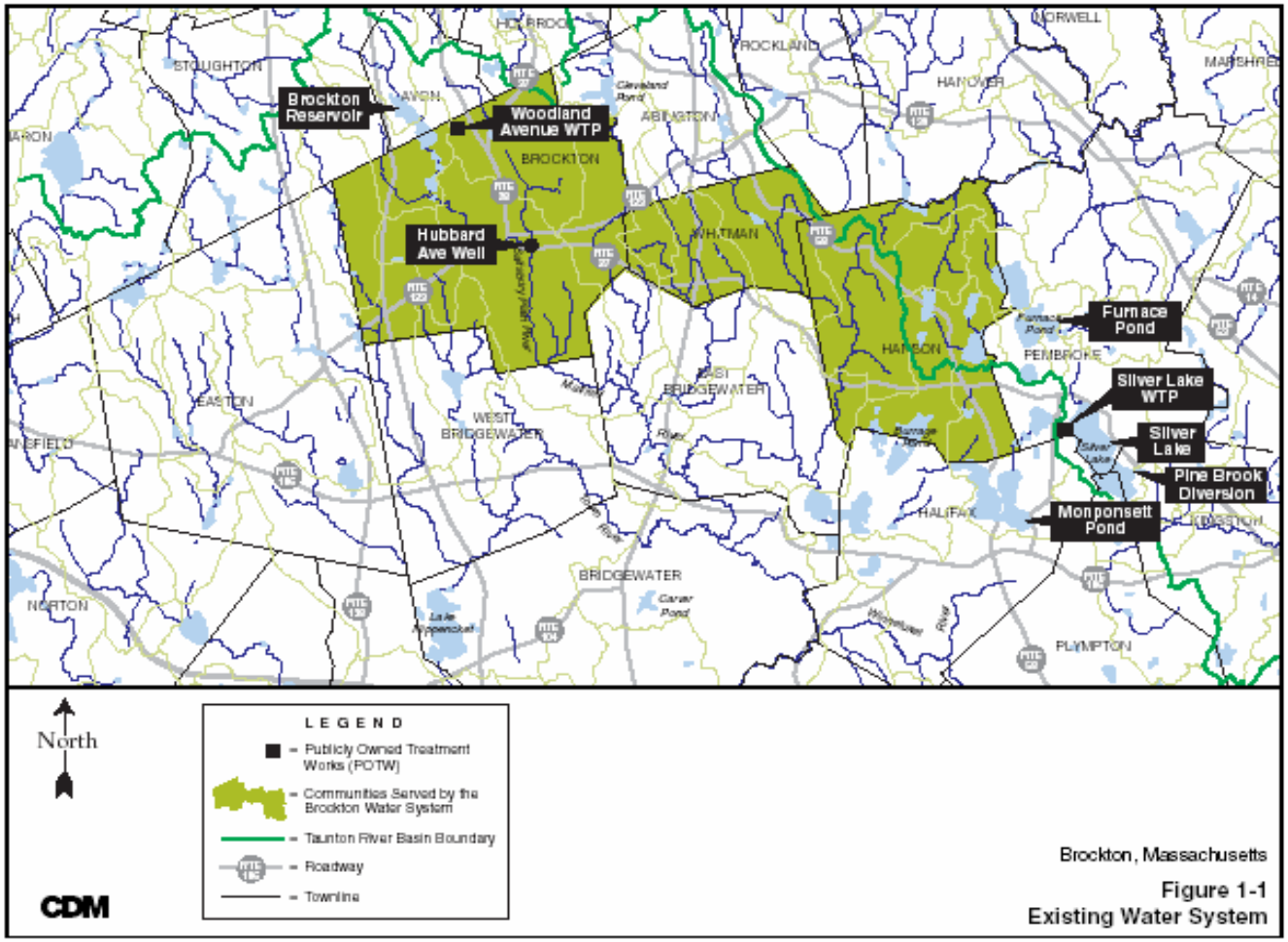
On February 12, 2004, WRC Staff recommended that Brockton's portion of the Aquaria application be approved. The recommendation was made after the application and associated data underwent careful review and analysis. Consideration was given to the public and agency comments received concerning this proposal. Staff recommended to the WRC that Brockton's request meets all applicable criteria of the Interbasin Transfer Act and its regulations.

The WRC discussed the merits of this application at March 11, 2004 meeting. **After this discussion, the Water Resources Commission voted unanimously (7-0) to approve the City of Brockton's request to purchase water from the proposed Aquaria Regional Desalinization Project under the Interbasin Transfer Act.**

FACTS PERTAINING TO THE APPLICATION

1. Brockton is proposing to purchase a maximum of 7.57 mgd (4.07 mgd under contract, with the option to purchase an additional 1 mgd for the phase when the Aquaria plant is operating at 5 mgd capacity, and up to an additional 2.5 mgd if the plant expands to 10 mgd).
2. Brockton is located mainly within the Taunton River Basin. Its wastewater discharge is to a tributary of the Taunton River.
3. Brockton's primary water supply source is Silver Lake, located in the South Coastal Basin. Silver Lake is supplemented by diversions from Furnace Pond in the South Coastal Basin and Monponsett Pond in the Taunton River Basin. The Silver Lake water supply system and transfer facilities were authorized, installed and useable prior to the effective date of the Interbasin Transfer Act (March 8, 1984) and are not jurisdictional under this review. A secondary source, the Brockton Reservoir, is located within the Taunton River Basin. The estimated yield of these sources, combined, is 10.3 mgd. (See Figure 2). These sources are inadequate to meet the Brockton water supply system's future demands.
4. The WRC approved the Aquaria portion of the ITA application for a maximum of 10 mgd potable water. The Aquaria facility will withdraw water from the Massachusetts Coastal Basin and treat it using conventional water treatment processes and a reverse osmosis desalinization process. The reverse osmosis units to be used by the plant are designed to provide a 75% recovery rate (i.e. three quarters of the water withdrawn will be potable, one quarter will contain dissolved salts, to be discharged back to the basin of origin).
5. In March 1996, the WRC ruled on how it would apply the criteria of the Act to this project:
   a. Compliance with the **environmental review criteria** of the Act's regulations (313 CMR 4.05 (1, 5, 6, 8)) will be the responsibility of Aquaria. *(The WRC found that Aquaria had met these criteria on August 14, 2003).*

Figure 2


Brockton Reservoir
Woodland Avenue WTP
Hubbard Ave Well
Furnace Pond
Silver Lake WTP
Silver Lake
Pine Brook Diversion
Monponsett Pond
BROCKTON
WHITMAN
HANSON
PEMBROKE
EAST BRIDGEWATER
WEST BRIDGEWATER
BRIDGEWATER
EASTON
STOUGHTON
AVON
ABINGTON
ROCKLAND
HANOVER
NORWELL
HALIFAX
PLYMPTON
NORTON
North
LEGEND
Publicly Owned Treatment Works (POTW)
Communities Served by the Brockton Water System
Taunton River Basin Boundary
Roadway
Townline
CDM
Brockton, Massachusetts
Figure 1-1
Existing Water System

b. Compliance with the **water supply system management criteria** (313 CMR 4.05 (2, 3, 4, 7)) will be the responsibility of any community purchasing **1 mgd or greater** from the proposed desalinization plant *(Brockton falls into this category)* **or any community, regardless of amount purchased, in the following cases:**

- If a community proposes to discontinue use or abandon one of its sources, and replace it with water from the proposed plant; or
- If a community which does not currently have a public water supply, proposes to create a public water supply entity, with its major source of supply being water from the proposed desalinization plant
- If the WRC determines, as provided in the regulations (313 CMR 4.04(5)(b)), that a particular transfer could have significant impacts.

c. **All communities** purchasing water from the proposed desalinization plant, regardless of the amount, must file an updated water conservation plan which meets the water conservation standards adopted by the WRC in 1992 (and updated in 2002).

6. The Secretary's Certificate on the Aquaria FEIR was issued on July 31, 2000. It required that communities seeking to connect to the desalinization plant must file a Notice of Project Change with MEPA. The NPC must address, among other things, the information required to evaluate the community's compliance with the applicable criteria of the Interbasin Transfer Act.
7. The Secretary's Certificate on Brockton's NPC was issued on December 8, 2003. It stated that no further MEPA review was necessary.

BASIS FOR THE FINDINGS

This interbasin transfer application was reviewed on its own merits. The Findings are made on facts relevant to the Interbasin Transfer Act and its regulations, and according to the guidance given to Staff by the WRC in March 1996, discussed above. As described in the WRC's Aquaria Findings and in Point 5 above, **these Findings discuss only the performance of the City of Brockton in meeting the water supply management criteria of the Act**. The WRC has ruled that Aquaria is in compliance with the environmental criteria of the Act. Other communities wishing to purchase water from Aquaria will be evaluated in accordance with the March 1996 guidance, as they file the required NPC with MEPA.

Brockton's application were subject to careful review and analysis by DCR's Office of Water Resources, DEP's Division of Watershed Permitting and Southeast Regional Office, and DFG's Riverways Program. Consideration was given to the public and agency comments received concerning this proposal. This WRC Decision was made after an extensive evaluation of Brockton's compliance with the five applicable water supply management criteria of the Interbasin Transfer Act regulations.

SYNOPSIS OF THE EVALUATION CRITERIA (313 CMR 4.05)

Criteria	Application Meets?
Criterion #1: MEPA Compliance	Yes
Criterion #2: Viable In-Basin Sources	Yes
Criterion #3: Water Conservation	Yes
Criterion #4: Watershed Management	Yes
Criterion #5: Reasonable Instream Flow	Yes, the WRC ruled that the Aquaria Project met this criterion in August 2003
Criterion #6: Groundwater/Pumping Test	Not Applicable
Criterion #7: Local Water Resources Management Plan	Yes
Criterion #8: Cumulative Impacts	Yes, the WRC ruled that the Aquaria Project met this criterion in August 2003

Attachment 1 provides a synopsis of the how the application addresses these criteria. The following section describes in more detail Brockton's compliance with the criteria.

Criterion #1 MEPA Compliance
The Secretary's Certificate on the Aquaria FEIR required that communities seeking to connect to the desalinization plant must file a NPC with MEPA. This NPC must address, among other things, the information required to evaluate the community's compliance with the applicable criteria of the Interbasin Transfer Act. Brockton filed its NPC on October 31, 2003. On December 8, 2003, the Secretary issued a Certificate on Brockton's NPC, stating that no further MEPA review was necessary. This criterion has been met.

Criterion #2 Viable In-Basin Sources
Brockton has been searching for alternative water supply sources since the 1960's. Section 2 of the NPC goes into great detail about potential sources, both in-basin and out-of-basin, that have been investigated and rejected. This information is not repeated here.

In 1993, EOEA completed the Strategy for Meeting the Water Supply Needs of Brockton and Other Taunton River Basin Communities Through the Year 2020. This document recommended both long and short-term solutions to Brockton's water supply needs. Brockton has continued to pursue short-term alternatives at the same time they have been investigating and pursuing long-term supplies.

Among the short-term alternatives Brockton has pursued is a water-sharing agreement with the Town of Hanson, whereby Brockton would develop a wellfield in Hanson and use the water for a specified period of time, after which the City would turn the wellfield over to Hanson. A Water Management Act (WMA) permit was issued for this wellfield by DEP in 2000, however, it is currently under appeal. The wellfield cannot be used pending the outcome of the appeal process.

Brockton is also pursuing the development of small bedrock wells, with the potential to produce a total of 0.29 mgd. Development of these wells is uncertain because of water quality concerns. In addition, if developed, they would only serve to provide a small amount of water. Brockton would still need to look for other long-term sources.

The Strategy identified three potential long-term water supply sources for Brockton's water supply. One of these was a potential in-basin source, the Taunton River Diversion. This diversion would have been located in the non-estuarine portion of the Taunton River near Middleborough. According to the requirements of the ITA, Brockton would need to take "all reasonable efforts … to identify and develop all viable sources in the receiving area of the proposed interbasin transfer" before applying for Interbasin Transfer Act approval. The authors of the Strategy acknowledged that if a proposed non-estuarine diversion of the Taunton River was deemed infeasible, Brockton would need to look to out-of-basin sources to solve its long-term water supply needs. In 1996, the WRC affirmed this by its approval of the 1 March 1996 Staff memo, which stated "Should this withdrawal (the Taunton River diversion) prove not to be … environmentally or economically viable …, then Brockton would have met all of the applicable criteria of the Interbasin Transfer Act." (page 4) [1]

In 1997, the Secretary of Environmental Affairs issued a Certificate on the SDEIR for the proposed Taunton River Diversion project suggesting that an out-of-basin regional solution should be further investigated. The Certificate also expressed concerns over the potential environmental impacts of the proposed diversion. Brockton decided to abandon pursuit of this option because of the potential environmental impacts.

After consultation with DEP and with the public record on Brockton's water supply exploration, the WRC has determined that Brockton has made "all reasonable efforts … to identify and develop all viable sources in the receiving area of the proposed interbasin transfer", and thus complies with this criterion.

As a result of the Secretary's 1997 Certificate, Brockton has investigated two out-of-basin sources to meet its long-term needs: connection to the MWRA and purchase of water from the Aquaria project. Both require ITA approval. The WRC does not advise a proponent to pursue one out-of-basin source over another. The proponent must make this judgment. Any proposed transfer will need to meet the applicable criteria of the Act and its regulations in order to be approved. After extensive investigation of the two potential sources, described in Section 2 of the NPC, Brockton determined that it was in its best interest to pursue the Aquaria alternative.

Criterion #3 Water Conservation

Brockton's water conservation program meets all of the 1992 Water Conservation Standards for the Commonwealth of Massachusetts and most of the 1999 IBT Performance Standards for Criterion #3. Brockton does not meet the Performance

[1] This ruling was based on information available in 1996 and was made prior to the adoption of the ITA Performance Standards by the WRC. Brockton's 2003 application was evaluated against the 1999 Performance Standards.

Standard for unaccounted-for water, which requires that this factor be no more than 10% of the overall water supply. However, the Performance Standards acknowledge that in certain cases, local conditions may prevent a proponent from meeting the standard, even after a substantial effort has been made. The WRC has determined that Brockton is adequately addressing its unaccounted-for water problem through the following measures:

- Brockton recently changed its billing system. Formerly, one-third of the town's meters were read and billed on a rotating basis. Now, with the new radio-read meters, Brockton is able to read and bill the entire town at the same time.
- Brockton has undertaken an extensive pipe replacement program to eliminate old lines that are prone to leaks.
- The City is in the process of replacing all of its customer meters with meter interface units or radio read meters to allow for more efficient meter reading, and the City is in the process of converting from a manual leak detection system to a digital system.

In addition to the conservation standards required by the WRC's guidance, Brockton also has instituted a process whereby new applications for water service can be modified by the Brockton Water Commission to minimize water use. The City reserves the right to refuse service to water-intensive uses.

Brockton has stringent restrictions on outdoor water use. The Brockton Water Commission determines the water ban phase approximately every two weeks, based on seasonal reservoir levels, average water demand, and meteorological conditions. When allowed, outdoor water use is through hand-held hoses only. Sprinklers are not permitted at anytime in Brockton.

The WRC believes that it is important to modernize older water supply systems and that all of these measures being implemented by Brockton provide an alternative means to meet this criterion[2] as provided for under the Performance Standards Guidance (page 2), and so recommend that Brockton has met this criterion.

Table 1 lists Brockton's water conservation accomplishments with respect to all of the standards.

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[2] MGL Chapter 21 §8D: "that all practical measures to conserve water have been taken in the receiving area, including but not limited to the following:
(a) the identification of distribution system sources of lost water, and where cost effective, the implementation of a program of leak detection and repair;
(b) metering of all water users in the receiving area and a program of meter maintenance;
(c) implementation of rate structures which reflect the costs of operation, proper maintenance and water conservation and encourage the same;
(d) public information programs to promote water conservation, including industrial and commercial recycling and reuse; and
(e) contingency plans for limiting use of water during seasonal or drought shortages"

Table 1
Brockton's Conservation Achievements

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Public Education	Active Public Education Program in place which should include: - Targeting largest users - School program - Bill stuffers or worksheet to calculate water use - Advertising/media stories - Conservation information centers - Speakers - PSAs etc - Promoting use of water saving devices - Civic/professional resources - Special events - Multilingual materials (as needed) - Contests/recognition	A broad-based public education program which attempts to reach every user at least two times per year (refer to the WRC's 1992 "Water Conservation Standards for the Commonwealth of Massachusetts" and the Massachusetts Water Works Association for recommended public education measures)	School Programs PSAs Newspaper Stories Bill Stuffers Tours of the Treatment Plant Speakers for Community Groups	Yes
		Targeting largest users	Brockton has worked with EOEA's Office of Technical Assistance to target large users. Through its water connection program, the Water Commission has required modification of water use practices.	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Leak Detection and Repair	Full Leak Detection survey every two years	Full Leak Detection survey within the previous two years of the application	The last full leak detection program was completed in 2001. In 2003, Brockton instituted an "unmanned" leak detection program using digital equipment.	Yes
	Include in full cost pricing		The cost of the leak detection program is included in the enterprise account.	
		Documentation of survey and of leaks identified and repaired	Documentation of the latest leak detection survey has been provided.	
		Completed by methods at least as comprehensive as the MWRA's regulations for leak detection	Completed by methods at least as comprehensive as the MWRA's regulations for leak detection	

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Metering	100% Metering Regular maintenance, calibration, testing and repair program All public buildings should be metered Quarterly billing, based on actual meter readings Master meters calibrated annually	100% Metering Regular maintenance, calibration, testing and repair program; description of program included in application All public buildings should be metered Quarterly billing, based on actual meter readings; bills should be easily understood by customer Master meters calibrated annually; documentation of annual master meter calibration	100% Metered Brockton has a regular maintenance, calibration, testing and repair program; a description of program was included in application All public buildings are metered Bills are sent quarterly, based on actual meter readings; bills are easily understood by customer Master meters are calibrated annually; documentation of annual master meter calibration was provided	Yes
Pricing	Full cost pricing Enterprise accounts Regular evaluation of rate structure	Documentation of full cost pricing Rate structure must encourage water conservation	Full cost pricing/Enterprise account Increasing block rate encourages conservation Rate structure evaluated annually. Will be introducing modifications in FY05	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Residential water use	Make water saving plumbing devices available to residential customers Strictly enforce State plumbing code	If the community's residential gallons per capita/day is greater than 65, the proponent should be implementing a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use.	Residential GPCD averages 60 Low flow devices were distributed by Old Colony Planning Council in the late '80's and early '90's The plumbing code is strictly enforced by the Building Inspector	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Public sector water use	All public buildings metered and water use accounted for Retrofit all public buildings with low-flow devices Meter hydrants used for pipe flushing and construction; charge for use Strictly enforce State plumbing code	All public buildings should be metered Retrofit all public buildings with low-flow devices Proponents should provide records of water audits conducted on public facilities. The most recent audit should have occurred within two years prior to the application for Interbasin Transfer approval.	All public buildings are metered Public buildings have been retrofit with low flow devices Hydrants used for construction are metered and contractors are charged for use The plumbing code is strictly enforced by the Building Inspector A water audit (“balance”) was conducted in conjunction with this application in order to determine the accuracy of the amount of unaccounted-for water. Documentation was provided.	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Water Supply System Management	Drought management plan Strategies to reduce peak daily and seasonal peak demands	Written Drought/emergency contingency plan, to include: - seasonal use guidelines - measures for voluntary and mandatory water use restrictions and describe how these will be implemented Tie water use restrictions to streamflow and/or surface water levels in the affected basin(s) where this information is available	Brockton has had a water ban in effect since 1981. The drought plan is tied to supply and demand, reservoir levels and climatic conditions. This information is reported at least once/week to the Water Commission which then determines the drought level. Brockton has an emergency plan, which addresses responses to natural, accidental and deliberate emergencies.	Yes
	Water audit every 3-5 years		A water audit ("balance") was conducted in conjunction with this application in order to determine the accuracy of the amount of unaccounted-for water. Documentation was provided.	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Water Supply System Management, continued	Update all water uses/plan to reduce unaccounted-for water	Unaccounted-for water should be at 10% or less	UAW averaged over 10% during the past 3 years (13.5%)	No, however, the performance standards recognize that local conditions may prevent a proponent from meeting a standard. Brockton has been undergoing an extensive program of replacing older pipelines that are prone to leaks. In addition, the change-over to the digital leak detection system has caused some disruption in the leak detection program. Staff recommends that the continuing pipe replacement program and the newly instituted digital leak detection program provide an alternate method of meeting intent of the criteria, as provided in the Performance Standards (page 2)
	Develop interconnections with other systems		Brockton has interconnections with Whitman, Hanson, Pembroke, Halifax, Avon, East Bridgewater, and Stoughton	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Other		A program of land use controls to protect existing water supply sources of the receiving area that meet the requirements of the Department of Environmental Protection.	DEP has stated that Brockton meets the surface water protection requirements. In addition, Brockton has just completed DEP's SWAP process.	Yes
		A long-term water conservation program which complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts should be in place.	Brockton's Long-Term Water Conservation Program (discussed in Section 3.5 of the Notice of Project Change) complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts	Yes

CONSERVATION MEASURE	1992 STANDARD	1999 IBT PERFORMANCE STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS?
Lawn and Landscape Water Conservation	Communities and public and private water suppliers should develop drought management plans that identify water supply and environmental indicators to serve as drought stage triggers and that outline a set of increasingly stringent water use restrictions that are designed to protect public health and the environment and that can be implemented through bylaw, ordinance or regulation.		Brockton's drought plan is tied to supply and demand, reservoir levels and climatic conditions. This information is reported at least once/week to the Water Commission which then determines the drought level. The authority for this is given in the City Code.	Yes
	Communities and public and private water suppliers should implement a water use restriction bylaw, ordinance or regulation that provides the community or water supplier with the ability to implement mandatory water use restrictions. These restrictions should be tied to environmental and water supply indicators as outlined in a drought management plan.		Brockton's City code gives the Water Commission the ability to implement mandatory water use restrictions, as outlined in the drought management plan.	Yes

Criterion #4 Watershed Management

Brockton's existing water supply sources are from surface water. Therefore the ITA requires that "a comprehensive forestry management program which balances water yields, wildlife habitat and natural beauty on watershed lands presently serving the receiving area has been implemented". Brockton currently manages the watershed lands that it owns or controls for water quality purposes. It does not have a regular program of logging or thinning to increase runoff from its watershed lands, instead, the City leaves forest land in its natural state to promote natural filtration of the runoff to its reservoirs. The City conducts regular foot patrols of the watershed to check for illegal dumping and has a program of dam maintenance.

Silver Lake, in the South Coastal Basin, is Brockton's primary source of water. This reservoir is located outside of the City boundaries, therefore Brockton does not have control over land uses in the area. Brockton owns 359 acres in the Silver Lake watershed, of which approximately 140 are forested. In addition to managing its forested lands to protect water quality, the City takes these additional measures to protect its watershed:

- Review of septic system repairs and upgrades within the watershed
- Review and comment on significant development proposals within the watershed
- Purchase of land or conservation restrictions within the watershed
- Foot patrols of the watershed and shoreline
- Water quality monitoring
- Dam maintenance

Brockton's secondary source of supply is the Brockton Reservoir, in Avon, in the Taunton River Basin. Brockton owns approximately 307 acres surrounding this source. This watershed is more highly urbanized than the Silver Lake watershed. Brockton is working to minimize contamination of this source from salt and sand applied to roads, industrial uses and residential uses.

Because both of Brockton's existing watersheds are not within City boundaries, Brockton officials have made efforts to communicate with officials within each community where the watershed lands are located to assure that high levels of protection are maintained on lands not owned or controlled by the City.

Brockton's 10-year Forestry Action Plan (required by the Performance Standards) reflects Brockton's priority for managing its watershed lands for water quality.

Because Brockton does not manage its watershed lands to improve yields to the reservoir, many of the forestry practices items outlined in the Performance Standards guidance for this criterion are irrelevant to this situation. The WRC believes that the Forestry Management Plan presented in the NPC provides an alternative means to meet this criterion, and thus this criterion has been met. The WRC further recommends, however, that the recommendations of DEP's SWAP report for Brockton's sources be prioritized and implemented as part of the Forestry Management Plan.

Criterion #5 Reasonable Instream Flow
Compliance with this condition was addressed through the Aquaria portion of this ITA review. For more information see the WRC's Findings on the Aquaria project, available at http://www.state.ma.us/dem/programs/intbasin/docs/aquariadec.doc.

Criterion #6 Groundwater/Pumping Test
This criterion is not applicable to this project.

Criterion #7 Local Water Resources Management Plan
A Draft Local Water Resources Management Plan was submitted with the application. The Plan addresses the issues identified in the 1999 Interbasin Transfer Act Performance Standards Appendix B Local Water Resources Management Plan Outline. Therefore the WRC approved Brockton's Local Water Resources Management Plan on March 11, 2004. The WRC further recommends that both the Local Water Resources Management Plan and the Forestry Management Plan be combined as one document to provide a comprehensive description of Brockton's water supply system management.

Criterion #8 Cumulative Impacts
Compliance with this condition was addressed through the Aquaria portion of this ITA review. For more information see the WRC's Findings on the Aquaria project, available at http://www.state.ma.us/dem/programs/intbasin/docs/aquariadec.doc.

OTHER ISSUES CONSIDERED

Concerns have been raised about the status of Whitman and Hanson under the ITA with respect to Brockton's purchase of water from the Aquaria project. The WRC has considered this matter carefully and has consulted with legal counsel to determine the correct approach to this issue.

Whitman has had the ability to receive water from the City of Brockton's water supply system since 1905, based on prior rights granted by the legislature to Whitman in 1893 for use of Silver Lake. The connection with the Brockton supply existed prior to the effective date of the ITA and therefore is not jurisdictional under this review. If the capacity of the water supply connection between Brockton sources and Whitman is increased, the ITA will be triggered at some level. If Whitman makes a separate agreement with Aquaria LLC, this will be treated as a separate application under the ITA and MEPA. Whitman will be required to file an NPC with MEPA and address the appropriate ITA requirements.

Hanson has had the ability to receive water from the City of Brockton's water supply system since 1899, through a special Act of the legislature. In 1983, Hanson developed its own supply and only used the Brockton system to meet peak and emergency demands. If the capacity of the water supply connection between Brockton sources and Hanson is increased, the ITA will be triggered at some level. If Hanson makes a separate agreement with Aquaria LLC, this will be treated as a separate application under the ITA and

MEPA. Hanson will be required to file an NPC with MEPA and address the appropriate ITA requirements.

Another issue raised throughout this process has been Brockton's releases from Silver Lake. As stated earlier, the transfer facilities at Silver Lake system were authorized, installed and useable prior to the effective date of the ITA, therefore, control of Brockton's releases is currently beyond the jurisdiction of ITA. It is the WRC's opinion that purchase of water from the Aquaria plant will provide the City of Brockton with needed redundancy, and will allow for flexibility in operation resulting in a lessening of impacts on all its water resources, including Silver Lake. The WRC therefore recommends that Brockton develop an operating plan for all of its sources, which will balance water supply needs with environmental needs. WRC Staff is available to assist with the development of this plan, if requested.

EO 385

This Decision is consistent with Executive Order 385, which has the dual objective of resource protection and sustainable development. This Decision does not encourage growth in areas without adequate infrastructure nor does it cause a loss of environmental quality or resources.

CONDITIONS OF THE DECISION

Based on the analyses and concerns expressed about this project, the approval of Brockton's application to purchase water from the Aquaria project is subject to the following conditions. **Brockton must commit in writing that it will abide by the conditions outlined below:**

In order to demonstrate continued compliance with Criterion #3, that all practical measures to conserve water have been taken in the receiving area:

1. Brockton must continue its demand management programs.
2. Brockton must provide documentation that the large user water audit has been reinstituted before it can begin to receive water from the Aquaria project.
3. Brockton must provide documentation verifying the success of the public building retrofit program before it can begin to receive water from the Aquaria project. This documentation must also include a discussion of the additional opportunities for water conservation within public buildings and a description of the programs to be implemented to take advantage of these opportunities, with a timetable for implementation.
4. Before the City can begin to receive water from Aquaria, Brockton must provide a plan, for WRC approval, to reduce unaccounted-for water to 10% or less. This plan should be developed in consultation with DEP.

5. Brockton must provide the DEP Annual Statistical Reports to the WRC for the first five (5) years after the City begins purchasing water from the Aquaria project, to determine if the programs in place are successful in reducing unaccounted-for water to 10% or below and keeping residential gpcd at 65 or less.
6. If residential gpcd increases above 65, Brockton must implement a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use, including the imposition of seasonal water use rates. If this occurs, the City must provide a plan for this program to the WRC for approval. This plan should include providing annual updates to the WRC on implementation and compliance.

In order to enhance its compliance with Criterion #4, that a comprehensive forestry management program which balances water yields, wildlife habitat and natural beauty on watershed lands presently serving the receiving area and under control of the proponent has been implemented:

1. Brockton must prioritize and implement the recommendations of DEP's Source Water Protection Report.
2. The recommendations to be implemented should include, at a minimum:
    - Working with local officials to control residential growth on undeveloped land.
    - Discouraging birds from lingering at Silver Lake and Brockton Reservoir and looking for the presence of beaver.
    - Working with emergency response teams to ensure that they are aware of the stormwater drainage in the watersheds.
    - Encouraging regular street sweeping in the watershed communities.

ATTACHMENT 1

INTERBASIN TRANSFER ACT
CRITERIA FOR EVALUATING AN APPLICATION FOR APPROVAL
BY THE CITY OF BROCKTON TO PURCHASE WATER
FROM THE AQUARIA REGIONAL DESALINIZATION FACILITY

CRITERION #1: An environmental review pursuant to MGL, c. 30, §§ 61 and 62H, inclusive has been complied with for the proposed IBT.

- *The Secretary's Certificate on the FEIR for the Aquaria project was issued on July 31, 2000.*
- *The ITA application for Brockton's request to purchase water from Aquaria was contained in a Notice of Project Change (NPC) filed for the Aquaria Regional Desalinization Project (EOEA # 10185).*
- *This NPC was filed with MEPA in October 2003.*
- *The Secretary's Certificate on this Notice was issued on December 8, 2003. This certificate stated that the NPC does not require preparation of a Supplemental Environmental Impact Report.*

CRITERION #2: All reasonable efforts have been made to identify and develop all viable sources in the receiving area.

The WRC performance standard for a water supply source directs a proponent to discuss the water supply alternatives considered, but rejected. Reason for the rejection of these alternatives should be clearly stated. This information should be included as part of the Local Water Resources Management Plan required under Criterion #7. In addition, as stated in the regulations, a local source must not cause unacceptable environmental damage.

- *Brockton has conducted extensive investigations for long- and short-term sources of water supply. Most of these sources were rejected due to water quality, low yield or environmental reasons.*
- *Brockton is in the process of jointly developing a well with the Town of Hanson for its short-term water supply needs. The Water Management Act permit needed for this well is currently under appeal by a third party.*
- *The WRC has stated previously that if the non-estuarine Taunton River Diversion was not viable, Brockton would need to look out-of-basin for a long-term water supply source.*
- *DEP has stated that Brockton does not have any reliable in-basin sources of water supply available.*

CRITERION #3: All practical measures to conserve water have been taken in the receiving area...

For a water supply transfer, the WRC performance standards require:

1) A full leak detection survey should have been completed within the previous two years of the application. The proponent should provide documentation regarding repair of leaks identified during the survey. Leak detection surveys should be carried out in accordance with the MWRA's leak detection regulations (360 CMR 12.00).

- *The last full leak detection program was completed in 2001.*
- *Documentation of the latest leak detection survey has been provided.*
- *It was completed by methods at least as comprehensive as the MWRA's regulations for leak detection.*
- *In 2003, Brockton instituted an "unmanned" leak detection program using digital equipment.*

2) The water supply system should be 100% metered, including public facilities served by the proponent. A program of meter repair and/or replacement must be in place. Documentation of annual calibration of master meters and a description of the calibration program should be included in the application.

- *The water supply system is 100% metered, including public facilities.*
- *A program of meter repair and/or replacement is in place.*
- *Documentation of annual calibration of master meters and a description of the calibration program were included in the application.*

3) Unaccounted-for water should be 10% or less. The proponent should provide documentation of unaccounted-for water, in both gallons and percentage of the total water pumped and withdrawn, for each of the past five years. The definition of accounted-for and unaccounted-for water for use in Interbasin Transfer applications is given in Appendix C of the Performance Standards. The plan by which the community intends to maintain or reduce this level should be included in the water resources management plan required under Criterion #7.

- *UAW averaged 13.5% during the past 3 years (14.7% in 2000, 13.4% in 2001, 12.5% in 2002)*
- *Although unaccounted-for water is greater than 10%, Brockton has provided an alternate method of meeting the intent of the criteria, as provided in the Performance Standards (page 2). This includes continuing to replace older pipelines that are prone to leaks, conversion to radio-read meters and conducting the newly instituted digital leak detection program.*

4) The proponent should provide documentation to show that there are sufficient sources of funding to maintain the system, including covering the costs of operation, proper maintenance, proposed capital improvements, and water conservation. The rate structure must encourage water conservation.

- *Brockton has an Enterprise Fund to cover the costs of operation, proper maintenance, proposed capital improvements, and water conservation.*
- *Brockton has an increasing block rate, which encourages conservation.*

5) The proponent should bill its customers at least quarterly based on actual meter readings. Bills should be easily understandable to the customer (e.g. providing water use in gallons and including comparison of the previous year's use for same period).

- *Customers are billed quarterly*
- *Bills are based on actual meter readings*

6) A drought/emergency contingency plan, as described in 313 CMR 4.02, should be in place. This plan should include seasonal use guidelines and measures for voluntary and mandatory water use restrictions and describe how these will be implemented. There should be a mechanism in place to tie water use restrictions to streamflow and/or surface water levels in the affected basin(s) where this information is available. The plan should be part of the Local Water Resources Management Plan required under Criterion #7.

- *Brockton's drought plan is tied to supply and demand, reservoir levels and climatic conditions. This information is reported at least once/week to the Water Commission which then determines the drought level.*

7) All government and other public buildings under the control of the proponent, should have been retrofit with water saving devices.

- *All government and other public buildings under the control of the proponent have been retrofit with water saving devices.*

8) Proponents should provide records of water audits conducted on public facilities. The most recent audit should have occurred within two years prior to the application for Interbasin Transfer approval.

- *A water audit ("balance") was conducted in conjunction with this application in order to determine the accuracy of the amount of unaccounted-for water. Documentation was provided.*

9) If the community's residential gallons per capita/day is greater than 65, the proponent should be implementing a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use.

- *Brockton's residential gpcd has averaged 60 over the past five years (66 in 1998; 63 in 1999; 71 in 2000; 48 in 2001; 50 in 2002).*

10) A broad-based public education program, which attempts to reach every user at least two times per year, through such means as mailings, billboards, newspaper articles, cable television announcements or programs, or the use of other media, should be in place. Water suppliers should refer to the WRC's 1992 "Water Conservation Standards for the Commonwealth of Massachusetts" and the Massachusetts Water Works Association for recommended public education measures.

- *Brockton has a broad-based public education program.*

11) A program which identifies and ranks all commercial, industrial and institutional customers according to amount of use, and requires regular contact with the largest users to promote water conservation, should be in place. The water supplier should make regular contact with these users to promote water conservation. Materials on water reuse and recirculation techniques should be provided, where appropriate.

- *Brockton has worked with EOEA's Office of Technical Assistance to target large users.*
- *Through its water connection program, the Water Commission has required modification of water use practices.*

12) A program of land use controls to protect existing water supply sources of the receiving area that meet the requirements of the Department of Environmental Protection.

- *DEP has stated that Brockton meets the surface water protection requirements.*
- *Brockton has just completed DEP's SWAP process.*

13) As part of the local water resources management plan, there should be a long-term water conservation program, which complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts, in place. This plan should reflect the goal of maintaining unaccounted-for at 10% or less of all water used, and of reducing future residential water use through a comprehensive residential water conservation program, if residential gpcd is greater than 65. The water conservation program should also have a goal of operating the system to balance water supply with other environmental needs. If the transfer is approved, the proponent will need to submit a copy of its Public Water Supply Annual Statistical Report (required by DEP) to the Commission annually to demonstrate the continued effectiveness of the program.

- *Brockton's Long-Term Water Conservation Program complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts*

CRITERION #4: A comprehensive forestry management program which balances water yields, wildlife habitat, and natural beauty on watershed lands presently serving the receiving area and under control of the proponent has been implemented.

- *Brockton owns approximately 359 acres within the Silver Lake watershed and 307 acres within the Brockton Reservoir watershed.*
- *Both reservoirs are outside of Brockton's city limits.*
- *Brockton manages its watershed lands to protect water quality; it does not engage in forestry practices on the watershed to increase water quantity.*
- *Brockton engages in review of septic system repairs and upgrades within the watershed, review and comment on significant development proposals within the watershed, purchases land or conservation restrictions within the watershed, provides foot patrols of the watershed and shoreline to determine if illegal dumping is taking place, conducts water quality monitoring and dam maintenance to protect the water quality of its watershed lands.*
- *Brockton officials have made efforts to communicate with officials within each community with watershed lands to assure that high levels of protection are maintained on lands not owned or controlled by the City.*

CRITERION #5: Reasonable instream flow in the river from which the water is transferred is maintained.

- *This Criterion was satisfied under the Interbasin Transfer review for the Aquaria portion of the project. More detail is found in the WRC's August 14, 2003 Findings on that project.*

CRITERION #6: The results of the pump test have been used to indicate the potential impacts of this project on other environmental resources and adjacent wells.

- *The Aquaria withdrawal will be directly from the Taunton River Estuary. Therefore this criterion is not applicable to this project.*

CRITERION #7: Communities have adopted or are actively engaged in developing a local water resources management plan.

- *A Draft Local Water Resources Management Plan was submitted with the application.*
- *The Plan addresses the issues identified in the 1999 Interbasin Transfer Act Performance Standards Appendix B Local Water Resources Management Plan Outline.*

CRITERION #8: The Commission shall consider the impacts of all past, authorized or proposed transfers in the donor basin.

- *This Criterion was satisfied under the Interbasin Transfer review for the Aquaria portion of the project. More detail is found in the WRC's August 14, 2003 Findings on that project.*

EO 385

- *These findings are consistent with Executive Order 385, which has the dual objective of resource protection and sustainable development. These findings do not encourage growth in areas without adequate infrastructure nor do they cause a loss of environmental quality or resources.*

- *In addition, the FEIR certificate requires that the NPC to be filed by Brockton and any other community wishing to purchase water from the Aquaria project discuss the Regional Policy Plan and the current local comprehensive plan or EO 418 Community Development Plan, and describe measures which will be taken to mitigate secondary growth impacts.*